

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 1-3, 9, 10, 17, 20 and 22 have been amended. Claim 8 is canceled without prejudice or disclaimer. Support for the amendments is provided by at least Figures 3-7 of the present application. No new matter has been added.

§102 Rejections

Claims 1-3, 8, 17 and 22 were rejected under 35 U.S.C. §102(b) as being anticipated by Fukunaga (US 5,582,596). Applicants respectfully traverse this rejection. As noted above, claim 8 has been canceled without prejudice or disclaimer, rendering this rejection moot as to that claim.

Fukunaga discloses with reference to Figures 1-5, an applicator 1 having a pair of syringes 2 and a spray head 20. The spray head 20 includes a hollow housing 21, a pair of hollow nozzles 22 defining channels 24 that are in flow communication with an interior of the housing 21, a pair of syringe connectors 25 extending from a distal end of the housing 21 opposite a position of the nozzles 22, and a tube 27 extending from each of the syringe connectors 25 to one of the nozzles 22. A gas supply tube 28 extends from a bottom side of the housing 21 that is adjacent to a proximal end of the housing 21 and adjacent to a connecting point of the syringe connectors 25. At least Figures 4 and 5 of Fukunaga illustrate the housing 21, nozzles 22, and connectors 25 formed as a single unitary piece.

Fukunaga fails to disclose an applicator that includes a manifold and a mixing tip as required by claim 1. Fukunaga fails to disclose a housing with proximal and distal ends and a cavity, and first and second tubes connected to first and second syringes at the proximal end of the housing that extend distally beyond the distal end of the housing, that is separate from a mixing tip having a gas chamber through which the first and second tubes extend and a gas inlet in fluid communication with the gas chamber, as required by claim 1. As noted above, Fukunaga discloses only an applicator configuration having a single unitary piece through which a pair of tubes 27 extend. Further, Fukunaga fails to disclose a gas inlet member that extends “proximally

from the mixing tip at a location distal of the distal end of the manifold housing,” as required by claim 1. The gas supply tube 28 disclosed in Figures 1-3 of Fukunaga is positioned at a proximal end of the housing 21 adjacent to the syringe connectors 25. Further, since Fukunaga fails to disclose a mixing tip that is separate from the housing 21, Fukunaga also fails to disclose a mixing tip having a gas inlet member. Thus, Fukunaga fails to disclose every limitation of claim 1 and the claims that depend from it.

Claims 2 and 3 recite many of the same or similar features as are included in claim 1. For example, claims 2 and 3 each recite a manifold and a mixing tip that are separate pieces, a manifold having a manifold housing, the mixing tip extending from (claim 3) or connected to (claim 2) a distal end of the manifold housing, and the mixing tip having a gas inlet member that is positioned distal of the distal end of the manifold housing. Applicants submit that Fukunaga fails to disclose every limitation of claims 2 and 3 for at least those reasons discussed above concerning the allowability of claim 1 over Fukunaga.

Claims 17 and 22 depend from claims 1 and 3, respectively. Therefore, claims 17 and 22 are allowable for at least the reason they are dependent upon an allowable base claim. Applicants do not otherwise concede the correctness of this rejection.

Claims 1-3, 8-12, 17-19 and 22 were rejected under 35 U.S.C. §102(b) as being anticipated by Uchida (US 5,980,866). Applicants respectfully traverse this rejection.

Uchida discloses a device for spraying tissue adhesive as many of the same or similar features as that applicator described above with reference to Figures 1-3 of Fukunaga. Uchida discloses a spray head 9 having a pair of syringe connecting ports 10 positioned at a proximal end thereof, and a pair of gas-jet openings 14 positioned at a distal end thereof. Tubes 11-12 extend from the ports 10 to the openings 14 through an internal cavity defined by the spray head 9. A gas feeding passage 13 is connected to the spray head 9 near the proximal end thereof to provide a flow of gas to the internal cavity of the spray head 9 for passage out of the gas jet openings 14 adjacent to the distal ends of tubes 11, 12.

Like the applicator disclosed by Fukunaga, the spray head 9 disclosed by Uchida is a single piece unit. Uchida fails to disclose a manifold and a mixing tip, wherein the mixing tip is connected to or otherwise mounted to the manifold housing. Further, Uchida fails to disclose a mixing tip that is a separate piece from the manifold, wherein the mixing tip includes a gas inlet member, and at least a portion of the gas inlet member is positioned distal of the distal end of the manifold housing. Therefore, Applicants submit that Uchida fails to disclose every limitation of claims 1-3 and the claims that depend from them for at least these reasons. Withdrawal of the rejection is respectfully requested.

§103 Rejections

Claims 20 and 21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Fukunaga or Uchida in view of Zinger (US 5,810,885). Applicants respectfully traverse this rejection. The rejection of claims 20 and 21 is directed to the manifold and mixing tip being separate pieces. Since this feature or a similar feature has been added to each of claims 1-3, this rejection will be addressed at this time as it relates to amended claims 1-3.

Fukunaga and Uchida are discussed in detail above. Zinger discloses a device for applying two-component products, such as medical tissue adhesives. The device includes a flat head piece 9 to which is mounted a tubular body 10. The tubular body 10 includes a multiple lumen tube 11. At the rear end of the head piece 9, portions of two canula hubs 12, 13 protrude for connection to separate syringes 20, 21 (see Figure 1 of Zinger). Two of the lumens 15, 16 of the tube 11 are fluidly connected to the syringes 20, 21 via the hubs 12, 13. The remaining lumen 17 of the multiple lumen tube 11 is fluidly connected to a source of pressurized gas via the flat head piece 9 and an air tube 30. While the multiple lumen tube 11 can be formed as a separate piece that is connected to a distal end of the flat head piece 9, the tube 11 fails to include all of the features and functionality required by the mixing tip of claims 1-3.

The tube 11 includes three separate lumens or channels 15-17 defined therein. However, none of the lumens 15-17 is configured or otherwise adapted to receive a tube that extend through the lumens 15-17 and distally beyond a distal end of the tube 11. Further, the tube 11 does not include a gas inlet member that is positioned distal of the distal end of the head piece 9.

The device disclosed by Zinger includes an air tube 30 that is integral with the flat head piece 9 and extends proximally from a proximal end of the head piece 9.

The rejection contends that the use of a separate tip as disclosed by Zinger in combination with the teachings of Fukunaga or Uchida would meet the limitation of the separate manifold and mixing tip features now recited in claims 1-3. Applicants respectfully traverse this assertion. As noted above, Zinger discloses a multi-lumen tube 11 as a removable tip. However, this removable tip fails to include each of the features included in a mixing tip required by claims 1-3. For example, the multi-lumen tube 11 disclosed by Zinger fails to include a gas chamber, “wherein the first and second tubes extend through the gas chamber and extend distally beyond the open distal end of the mixing tip,” as required by claim 1, or the gas inlet member, wherein “at least a portion of the gas inlet member extends proximally from the mixing tip at a location distal of the distal end of the manifold housing” as required by claims 1-3.

Fukunaga and Uchida fail to disclose a separate mixing tip from a manifold housing, much less a mixing tip that includes those features required by claims 1-3. One of skill in the art reviewing the multi-lumen removable tube 11 disclosed by Zinger would find no motivation to separate the single piece devices disclosed by Zinger and Uchida to come up with a device having all of the features of the mixing tip recited in claims 1-3. There is no motivation or suggestion whatsoever provided in Fukunaga, Uchida or Zinger, alone or in combination, to provide a mixing tip and a manifold as separate piece, wherein the mixing tip includes the claimed gas inlet member. Therefore, Applicants submit that Fukunaga, Uchida and Zinger, alone or in any combination, fail to disclose or render obvious every limitation of claims 1-3 and the claims that depend from them. Applicants do not otherwise concede the correctness of this rejection.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance. If a phone conference would be helpful in resolving any further issues related to this matter, please contact Applicants' attorney listed below at (612) 371-5387.

Respectfully submitted,

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